



PATENT APPLICATION
Serial No. 08/716,223
Attorney Docket No. 702-961170

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit 1761

In re Application of

G.A. VAN SCHOUWENBURG

Serial No. 08/716,223

Filed November 22, 1996

Examiner – C. Sherrer

METHOD FOR PREPARING A
COHERENT PIECE OF MEAT
FROM SMALLER PIECES OF
MEAT, AND THE COHERENT
PIECE OF MEAT OBTAINED

Pittsburgh, Pennsylvania
April 2, 2001

APPEAL BRIEF FROM THE PRIMARY EXAMINER
TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

BOX AF

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This Appeal Brief is in support of a Notice of Appeal filed in the above-identified application on February 1, 2001 and is timely filed on April 2, 2000 because April 1, 2001 fell on a Sunday. The Notice of Appeal appeals the decision of the Examiner dated November 2, 2000, rejecting claims 1, 3, 9-12, and 14-20. These claims have been at least twice rejected.

The heading used hereunder and the subject matter set forth under each heading are in accordance with 37 C.F.R. § 1.92(c)

I. Real Party In Interest

The real party in interest is the Applicant of the above-identified application as listed in the caption of this Brief.

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231

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II. Related Appeals and Interferences

No other Appeals or Interferences are known to Applicant, Applicant's Representative, or Applicant's assignee which would be directly affected by or have a bearing on the Board's decision in this Appeal.

III. Status of Claims

Each of claims 1, 3, 9-12, and 14-20 were rejected in the Office Action dated November 2, 2000. These claims have been at least twice rejected. Claims 1, 3, 9-12, and 14-20 are reproduced in Appendix A.

IV. Status of Amendments

No further amendment subsequent to the Office Action of November 2, 2000, has been filed.

V. Summary of the Invention

As described in the specification, the invention defined in the claims on appeal is a method of manufacturing a coherent piece of raw meat from smaller pieces of meat. The method includes a step of massaging and/or tumbling smaller pieces of meat with one or more edible salts so the proteins in the meat solubilize and exude from the pieces of meat (page 4, lines 19-25). A layer of exuded solubilized proteins forms on and covers the surfaces of the pieces of meat (page 5, lines 21-23). Subsequently, the pH of the solubilized pieces of the proteins is reduced by adding an acidifying agent such as gluconodeltalacton and an encapsulated edible acid (page 5, lines 23-25). The solubilized proteins on the surfaces of the meat denature and form an adhesive layer between the pieces of meat (page 5, lines 29-31). The smaller pieces of meat are mutually joined together because the pH decrease occurs only in the layer of the solubilized proteins and possibly on the surfaces of the meat but not within the interior of the pieces of meat (page 5, lines 32-35). The pieces are held against each other to form a coherent piece of meat (page 3, lines 3-4) in a mould or

container (page 12, lines 26-27). The meat may be placed within a vacuum bag in a mould or container (page 12, lines 22-25). The pH of the solubilized proteins between the pieces of meat is decreased by 0.5 to 3, preferably 0.75 to 3, more preferably 1-2 pH points (page 5, lines 14-19). Force meat, a pre-blend of finely reduced lean meat, may be added to the smaller pieces of meat (page 11, lines 15-18). Force meat contains released solubilized proteins which can partially form the solubilized proteins between the pieces of meat (page 11, lines 18-19). When force meat is used, the pieces of meat are salted slightly before addition of the force meat (page 11, lines 22-24).

VI. Issues Presented

The issues presented are (i) whether claims 1, 3, 9-12, and 14-20 are indefinite under 35 U.S.C. § 112, second paragraph, for use of the phrases “substantially retain the properties of unprocessed raw meat” and “substantially do not denature”, (ii) whether claims 1, 3, 12, 14, 15, and 18-20 are anticipated by U.S. Patent No. 4,772,477 to Weiss et al., (hereinafter “the Weiss et al. patent”) and (iii) whether claims 1, 3, 9-12, and 14-20 are obvious under 35 U.S.C. § 103(a) over the Weiss et al. patent in view of U.S. Patent No. 3,740,235 to Weiner.

VII. Grouping of Claims

Claims 1, 3, 9-12, and 14-20 do not stand or fall together. The claims should be considered to stand or fall according to the following groups:

- Group 1: Claims 1, 12, 14-16, and 18
- Group 2: Claims 3, 19, and 20
- Group 3: Claims 9, 10, and 17
- Group 4: Claim 11

VIII. Argument

A. Rejection under 35 U.S.C. § 112, second paragraph.

Claims 1, 3, 9-12, and 14-20 stand rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness.

The Office Action of November 2, 2000, indicated the phrases "substantially retain the properties of unprocessed raw meat" and "substantially do not denature" have an unknown scope. Apparently, at issue is the meaning of the term "substantially". These phrases have been part of claim 1 since the application filing date of September 20, 1996, and the use of "substantially" was first objected to in the last Office Action of November 2, 2000.

The term "substantially" is intended to reflect the limited denaturing process which occurs in the method of the present invention. An acidifying agent is mixed into the layer of solubilized proteins. As the acid is released, the pH of this layer drops sharply enough to denature the solubilized proteins. Over time, the acid migrates out of the layer into the surrounding meat. The pH in the layer goes up and the pH in the rest of the meat drops. Eventually the pH is equal throughout the product. The denatured layer "glues" the pieces of raw meat together, while the bulk of the meat looks and feels like raw, unprocessed meat. In this manner, the smaller pieces of meat are joined together via the denatured proteins while the bulk of the meat within the small pieces substantially retains the properties of unprocessed raw meat. The proteins within the bulk of the meat likewise are not denatured, hence, the proteins present in the smaller pieces substantially are not denatured. The specification is replete with explanations and disclosure of how the proteins on the surfaces of the meat solubilize and denature to form an adhesive bond between the pieces of meat while the pieces of meat retain their raw nature. See, for example, page 4, lines 3-18 as set forth below:

The processes which are of importance for the present invention involve selective denaturation, and a selective denaturation which can be accurately controlled. The term selective denaturation comprises a selection in accordance to place (between the meat parts in and on the surfaces of the meat parts) and/or a protein-selective denaturation. The objective here is to mutually join pieces of meat such that "one piece" of meat is once again created, while the raw character of the meat is wholly retained. This is possible if coagulation takes place selectively on and/or close to the interfaces and the pieces of meat themselves are not denatured. The result is then a product which retains all the characteristics of raw meat but in which (partial) coagulation has taken place on the interface between the parts, wherein bonds between proteins have been created which are strong enough to firmly bind together the meat parts.

An important aspect of the present invention is that the pieces of the raw meat retain their raw nature and only the interfaces between the pieces of meat denature. Use of the term "substantially" in claim 1 bears out this feature of the present invention. In view of the specification, it is believed that claim 1 and the dependent claims 3, 9-12, and 14-20 are sufficiently definite to indicate the scope of the claimed invention.

B. Prior Art Rejections

1. 35 U.S.C. § 102(b)

Claims 1, 3, 12, 14, 15 and 18-20 stand rejected under 35 U.S.C. § 102(b) for anticipation by U.S. Patent No. 4,772,477 to Weiss et al.

a. Group 1: Claims 1, 12, 14-16, and 18

The Weiss et al. patent is directed to the preparation of sausages and the like and acidulants therefor. The Weiss et al. patent lacks a teaching or suggestion of each of the following elements of claim 1 and dependent claims 12, 14-16, and 18:

- (i) massaging and/or tumbling smaller pieces of meat;
- (ii) solubilizing and exuding proteins from the meat pieces;
- (iii) forming a layer of the solubilized and exuded proteins on the surfaces of the meat pieces;
- (iv) denaturing and coagulating the solubilized and exuded proteins;

- (v) adhering the meat pieces together via the denatured proteins with a decreased pH; and
- (vi) substantially retaining the raw nature of the meat pieces.

Sausage preparation is disclosed in Examples 1 and 2 of the Weiss et al. patent as using a step of “thorough mixing” of meat product along with other components of the sausage. This mixing step is distinct from the massaging and/or tumbling steps set forth in claim 1 of the present application. “Mixing”, as described by the Weiss et al. patent in the production of winter/summer sausage or salami, is designed to carefully avoid any smearing between the fat and the meat. Once smearing occurs, the fat and the meat are no longer separated and the marbling of the sausage or salami disappears. Moreover, smeared meat products do not dry properly and are at risk for rotting.

The present invention, in contrast, requires massaging and/or tumbling to exude proteins on the surfaces of the meat pieces. If such meat pieces with exuded proteins were used to prepare sausage and the like, smearing would occur. Any process performed according to the Weiss et al. patent would be done to minimize any solubilization of proteins (avoiding smearing), for example by mixing the ingredients in a bowl chopper, a conventional apparatus used in the meat processing industry. Products produced according to the Weiss et al. patent must necessarily avoid exudation of proteins and covering the pieces of meat with a layer of solubilized proteins. This is directly contrary to the process of the present invention as set forth in claim 1 which requires that a layer of solubilized proteins forms on and covers the surfaces of the pieces of meat. One skilled in the art would not look to the Weiss et al. patent for producing meat product in which solubilized proteins are to be produced on the surfaces of the meat in order to bind those pieces of meat together.

Moreover, claim 1 specifically requires that the pieces of meat are massaged and/or tumbled. “Massaging” and “tumbling” are not the same as “mixing” in the meat

processing industry. The Declaration by Dr. Gerrit Wijngaards accompanying the Amendment of August 18, 2000 detailed key distinctions between the process of Weiss et al. and the claimed invention. The details of the Declaration are not repeated herein; however, certain points merit emphasis.

The terms massaging and tumbling are terms of art in the meat processing industry as has already been demonstrated on the record in the Wijngaards declaration via the accompanying copy of U.S. Patent No. 4,517,888, which is representative of a device for massaging or tumbling meat. In massaging or tumbling, water and salt are added either by injecting the meat with brine or by directly adding water and salt thereto and the meat is tumbled or scooped and thoroughly tossed about. The proteins on the exterior of the meat are extracted by the salt and transported to the outside of the meat pieces. Meat that has been tumbled or massaged has a clearly visible mass of creamy paste-like and very tacky exudate. Nowhere in Weiss et al. is there any teaching to massage and/or tumble smaller pieces of meat (as it is known in the meat processing industry) with a salt so that the proteins on the pieces of meat solubilize and exude from the salt pieces of meat. Importantly, no layer of solubilized protein forms on and covers the surfaces of the meat disclosed in Weiss et al.

As described in the Wijngaards declaration, when pieces of meat are massaged and tumbled they become covered with physical masses of creamy paste-like and very tacky exudate. This is similar to the description and Example 1 on page 12 of the present application in which the resultant meat mass is described as being chunks of meat lying in a slimy layer of solubilized exuded proteins. In contrast, the mixing of dry sausage as produced in Weiss et al. is a very gentle process where the pieces of meat and fat remain separate so the distinct components remain visible. No fusing of the compounds is achieved. More particularly, the fusing of the compounds in sausage making per the Weiss et al. patent is simply undesired.

The Weiss et al. patent does not disclose mixing an acidifying agent into any layer of solubilized proteins to denature and coagulate those proteins so that the pieces of meat join together such that the proteins present within the small pieces of meat substantially do not denature. The Weiss et al. patent is completely silent on the development of a layer of solubilized proteins which denature and coagulate to join the pieces of meat together because no such process would occur in preparation of a sausage. The meat products of concern in the Weiss et al. patent are completely different from the substantially raw meat product of the present invention.

Applicant acknowledges that the Weiss et al. patent teaches production of sausage in which salt, ground pork, and beef are ingredients which are combined together. Certain acids may also be included in the mixture. However, Applicant has not simply claimed a mixture of those components. While the Weiss et al. patent describes adding an acidulant to a mixture, the meat acidulants described in the Weiss et al. patent serve a completely different purpose and produce a very different effect from the acidification step set forth in claim 1 of the present application. The acids added to the meat mixture in the Weiss et al. patent do not result in local denaturization of proteins on the surfaces of meat pieces to bind the pieces of meat together as presently claimed. Acid is added to the meat mixture of the Weiss et al. patent to improve consistency and taste as well as shelf life of the meat product and targets the entire product. In contrast, acidification in the present invention affects only the proteins between meat part pieces in order to adhere the pieces of meat together.

Accordingly, claims 1, 12, 14-16, and 18 define over the Weiss et al. patent.

b. Group 2: Claims 3, 19, and 20

Claims 3, 19, and 20 each depend from claim 1 and define over the Weiss et al. patent for the same reasons discussed above regarding claims 1, 12, 14-16, and 18. In

addition, each of claims 3, 19, and 20 further require that the pH of the interface between the smaller pieces of meat and the layer with the solubilized proteins is decreased by 0.5 to 3 (claim 3), 0.5 to 3 (claim 19), or 1 to 2 (claim 20). As pointed out in the Office Action of February 2, 2000, the Weiss et al. patent indicates that the overall pH of the Genoa salami produced in example 3 drops from 5.85 to 4.8 to 4.4, a decrease of 0.5 to 1.45 pH units. This however is an indication of the pH of the entire sample of Genoa salami. Moreover, the pH drop described in the Weiss et al. patent makes the salami no longer "substantially" raw. *Office Action*
There is nothing in the Weiss et al. patent that indicates that there is any change in pH in the interface between the pieces of meat which form the salami as is required by claims 3, 19, and 20 of the present application. This is because the meat product produced according to the Weiss et al. patent is not produced from smaller pieces of meat which retain their raw character and which are bound together via a piece of layer of solubilized proteins which are denatured to bind the small pieces of meat together at a lowered pH. In contrast (as described above), the present invention results in a temporary pH drop in the interfaces between the meat pieces with a low overall pH drop of the whole meat product. Accordingly, the Weiss et al. patent does not anticipate the subject matter of claims 3, 19, or 20.

2. 35 U.S.C. § 103(a)

Claims 1, 3, 9-12, and 14-20 stand rejected under 35 U.S.C. § 103(a) for obviousness over the Weiss et al. patent in view of U.S. Patent No. 3,740,235 to Weiner (hereinafter “the Weiner patent”). According to the Office Action of February 9, 1998, the Weiner patent teaches a method of forming beef loaf wherein chunks of meat are mixed with relatively finely grounded beef as a binding agent and salts which are heated to a temperature of 80 to 120°F followed by rapid chilling. The Weiner patent is not directed to a method of forming coherent pieces of meat as set forth in the present claims.

According to the process of the Weiner patent, chunks of meat are mixed together with salt and water in a conventional mixer and heated. The heating step is required to set the product. There is no massaging or tumbling involved. A binder is added to the mixture of meat chunks, salted water wherein the binder may be in the form of relatively finely divided meat. The meat composition is then remixed and vacuum packed. There is no teaching or suggestion in the Weiner patent to massage and/or tumble smaller pieces of meat, to solubilize or exude proteins from the meat, to form a layer of solubilized and exuded proteins on the surfaces of the meat, to denature and coagulate the solubilized and exuded proteins, or to adhere the meat pieces via the denatured proteins under a decreased pH.

As such, the Weiner patent does not account for the deficiencies in the Weiss et al. patent and the obviousness rejection based thereon should be withdrawn. Notwithstanding the forgoing, the patentability of the claims of Groups 1-4 is addressed below.

a. Group 1: Claims 1, 12, 14-16, and 18

The Weiner patent does not account for the deficiencies in the Weiss et al. patent with respect to the elements of claims 1, 12, 14-16, and 18 set forth above. Accordingly, claims 1, 12, 14-16, and 18 are not suggested by the combined teachings of the Weiss et al. and Weiner patents.

b. Group 2: Claims 3, 19, and 20

Claims 3, 19, and 20 are further limited to a decreased pH in the interface between the smaller pieces of meat and the layer of solubilized proteins. Again, the Weiner patent does not suggest a decrease of pH much less a decrease of pH in the interfaces between the pieces of meat. Hence, the combined teachings of the Weiss et al. patent and the Weiner patent does not render obvious claims 3, 19, and 20.

c. Group 3: Claims 9, 10, and 17

Claims 9, 10, and 17 depend from claim 1 and are further limited to a method of using forcemeat to prepare the solubilized proteins (claim 9), require that the smaller pieces of meat are slightly salted prior to the addition of the forcemeat (claim 10), or require meat reduced in size as a starting material (claim 17). Although the Weiner patent discloses using a binding agent which may be formed primarily of finely divided meat, there is nothing in the Weiner patent that suggests that such finely divided meat should be comminuted with salt to solubilize proteins between smaller pieces of meat and to produce an adhesive layer between the pieces of meat to cause the pieces of meat to join together. Hence, the subject matter of claims 9, 10, and 17 is not suggested by the combined teachings of the Weiss et al. and Weiner patents.

d. Group 4: Claim 11

Claim 11 depends from claim 9 and requires that the smaller pieces of meat are massaged with the salts prior to the addition of the forcemeat. The Weiner patent does not have any teachings of massaging smaller pieces of meat (in the Weiner patent, the meat chunks) with a salt prior to the addition of the binder. At most, the muscle chunks are mixed with the salt. This is not a similar process of massaging as detailed above. Accordingly, the subject matter of claim 11 is not suggested by the combined teachings of the Weiss et al. and Weiner patents.

IX. Conclusion

The Weiss et al. patent relied upon to reject claims 1, 3, 9-12, and 14-20 either for anticipation or for obviousness in combination with the Weiner patent is factually deficient because the Weiss et al. patent does not teach or suggest the elements of claim 1 of massaging or tumbling smaller pieces of meat, solubilize and exuding proteins from the meat pieces, forming a layer of the solubilized and exuded proteins on the surfaces of the meat

pieces, denaturing and coagulating the solubilized and exuded proteins and adhering the meat pieces together via the denatured proteins under decreased pH such that the smaller pieces bind together and substantially retain the raw nature of the meat pieces.

Reversal of the outstanding rejections and allowance of claims 1, 3, 9-12, and 14-20 are respectively requested.

The original and two (2) copies of this Appeal Brief are enclosed along with a check in the amount of \$310.00 for the filing fee as required under 37 C.F.R. 1.17(c).

Respectfully submitted,

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APPENDIX A

1. A method for manufacturing a coherent piece of raw meat from smaller pieces of raw meat, comprising the steps of:

massaging and/or tumbling smaller pieces of meat with one or more edible salts such that the proteins of the smaller pieces of meat solubilize and exude from the salt treated pieces of meat and a layer of exudate of solubilized proteins forms on and covers the surfaces of the pieces of meat;

mixing an acidifying agent into the layer of exudate of solubilized proteins to selectively denature and coagulate the solubilized proteins such that the smaller pieces of meat are mutually joined but themselves substantially retain the properties of unprocessed raw meat because proteins present in the smaller pieces of meat substantially do not denature and holding the pieces of meat against each other to form the coherent piece of meat,

thereby forming an adhesive layer between the pieces of meat as the solubilized proteins denature under influence of a decrease in pH resulting from the addition of the acidifying agent, and

wherein the pH decrease is obtained by adding an additive causing a delayed acidification in the layer with solubilized proteins, said additive selected from the group consisting of gluconodeltalacton and an encapsulated edible acid.

3. The method of claim 1 wherein at least on the interfaces between the smaller pieces of meat and the layer with solubilized proteins a temporary pH decrease is brought about of 0.5 to 3.

9. The method of claim 1, wherein the solubilized proteins are at least partially formed by preparing a forcemeat from finely reduced meat with water and one or more suitable salts which is mixed with the smaller pieces of meat.

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10. The method of claim 9, wherein the smaller pieces of meat are slightly salted prior to addition of the forcemeat.

11. The method of claim 9, wherein the relatively smaller pieces of meat are massaged with one or more suitable salts prior to addition of the forcemeat.

12. The method of claim 1, wherein sodium chloride is used for solubilizing proteins.

14. The method of claim 1, wherein the meat is held in a mould or container at least during the selective denaturation and coagulation.

15. The method of claim 14, wherein the meat is held under pressure in a container.

16. The method of claim 14, wherein the meat is arranged in a vacuum bag which is placed in the container.

17. The method of claim 1, wherein meat reduced in size is used as a starting material and the denaturation and coagulation is performed while the meat is held in a layer under pressure to form a product.

18. A coherent piece of meat formed from smaller pieces of raw meat joined by denatured and coagulated solubilized protein produced according to the method of claim 1.

19. The method of claim 1, wherein at least on interfaces between the smaller pieces of meat and the layer with solubilized proteins a temporary pH decreases is brought about of 0.75 to 3.

20. The method of claim 1, wherein at least on interfaces between the smaller pieces of meat and the layer with solubilized proteins a temporary pH decrease is brought about of 1 to 2.